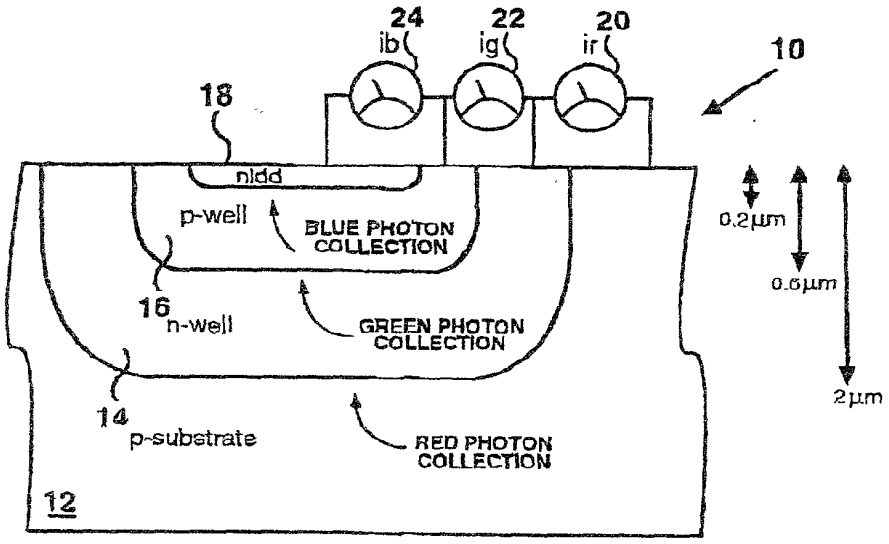
24
ib
22
ig
20
ir
10
18
nldd
p-well
BLUE PHOTON COLLECTION
16
n-well
GREEN PHOTON COLLECTION
14
p-subetrate
RED PHOTON COLLECTION
12
0.2µm
0.6µm
2µm

FIG. 1

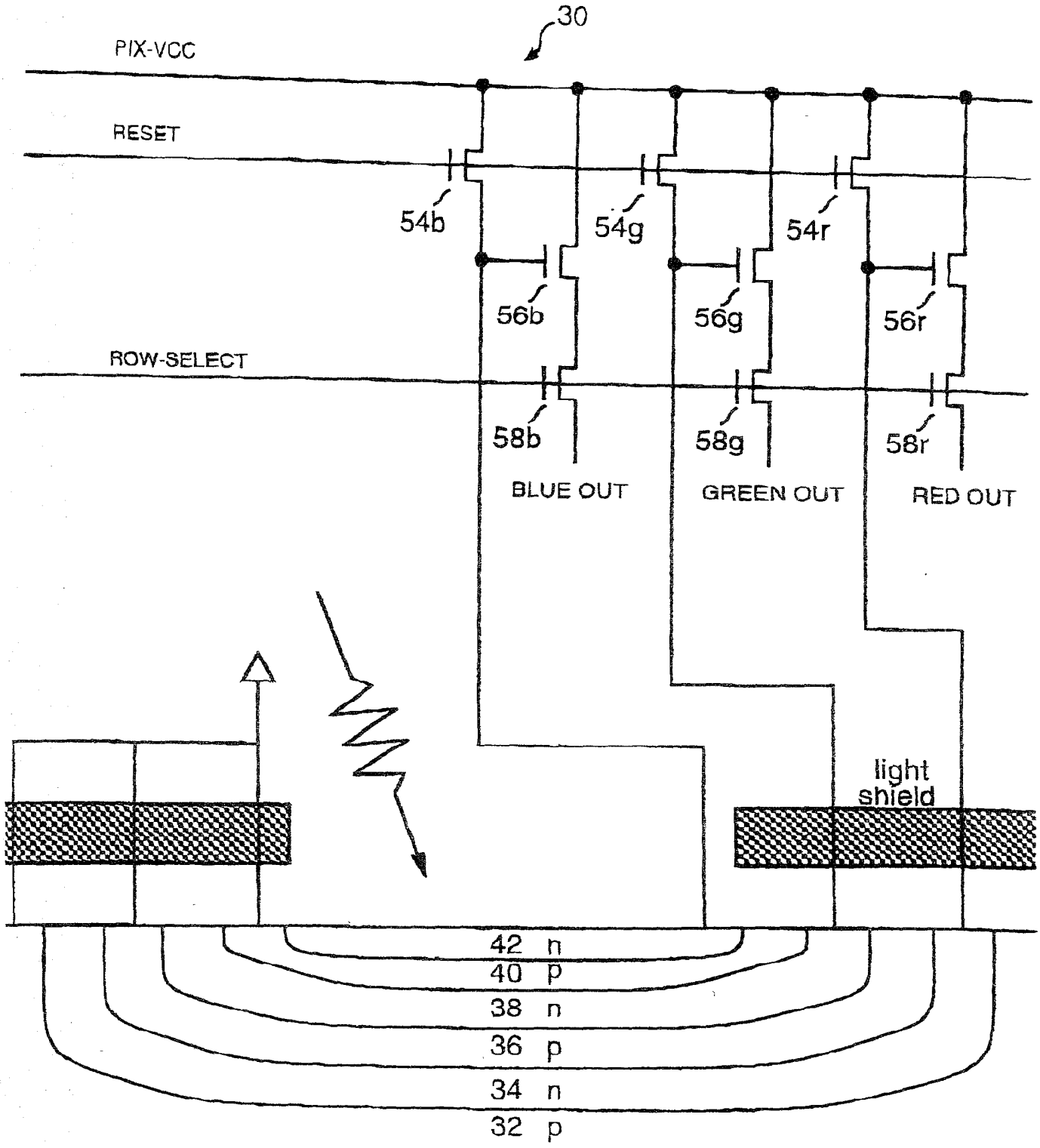
30
PIX-VCC
RESET
54b
54g
54r
56b
56g
56r
ROW-SELECT
58b
58g
58r
BLUE OUT
GREEN OUT
RED OUT
light shield
42 n
40 p
38 n
36 p
34 n
32 p

FIG. 2A

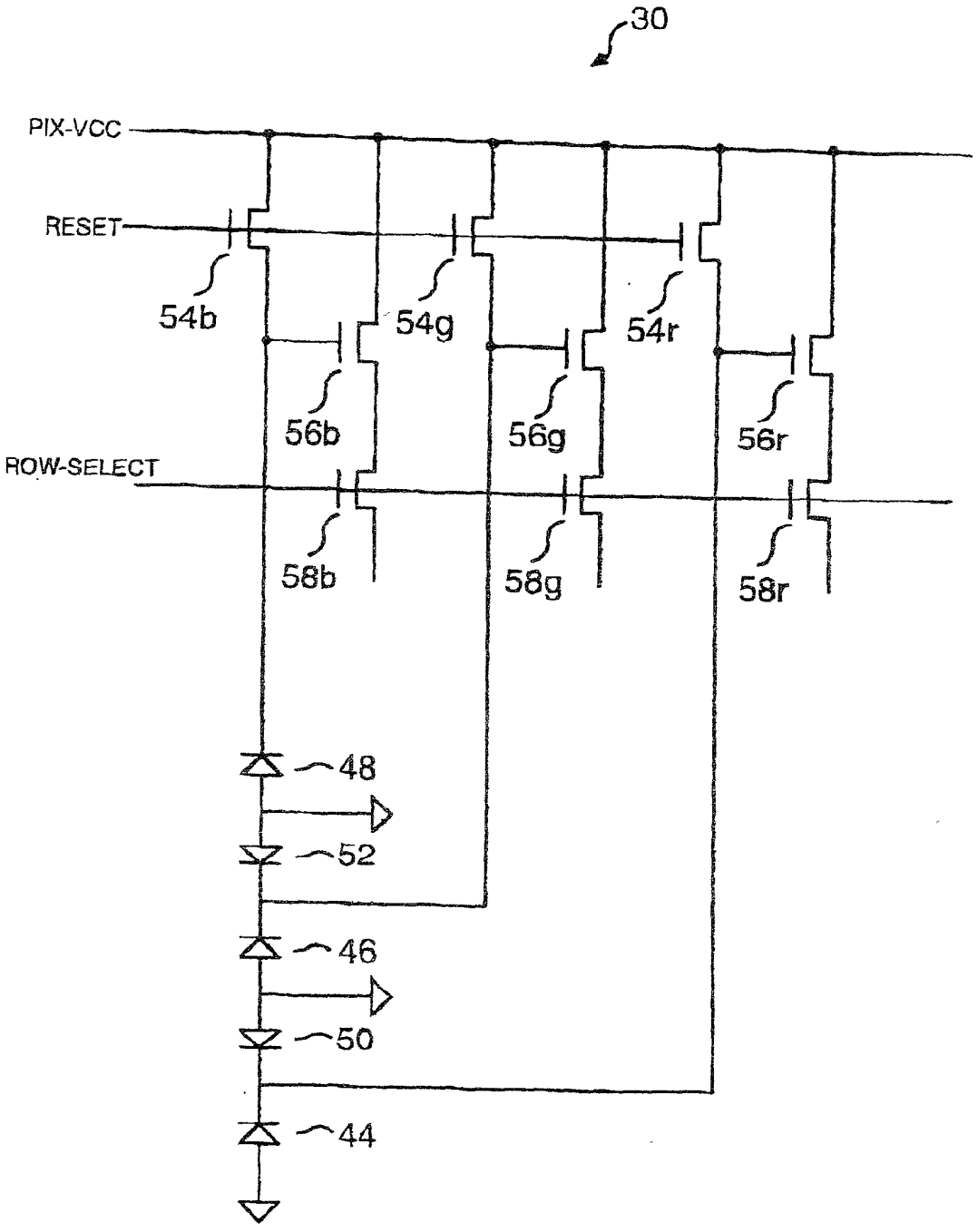
30
PIX-VCC
RESET
54b
54g
54r
56b
56g
56r
ROW-SELECT
58b
58g
58r
48
52
46
50
44

FIG. 2B

Express Mail Label No.

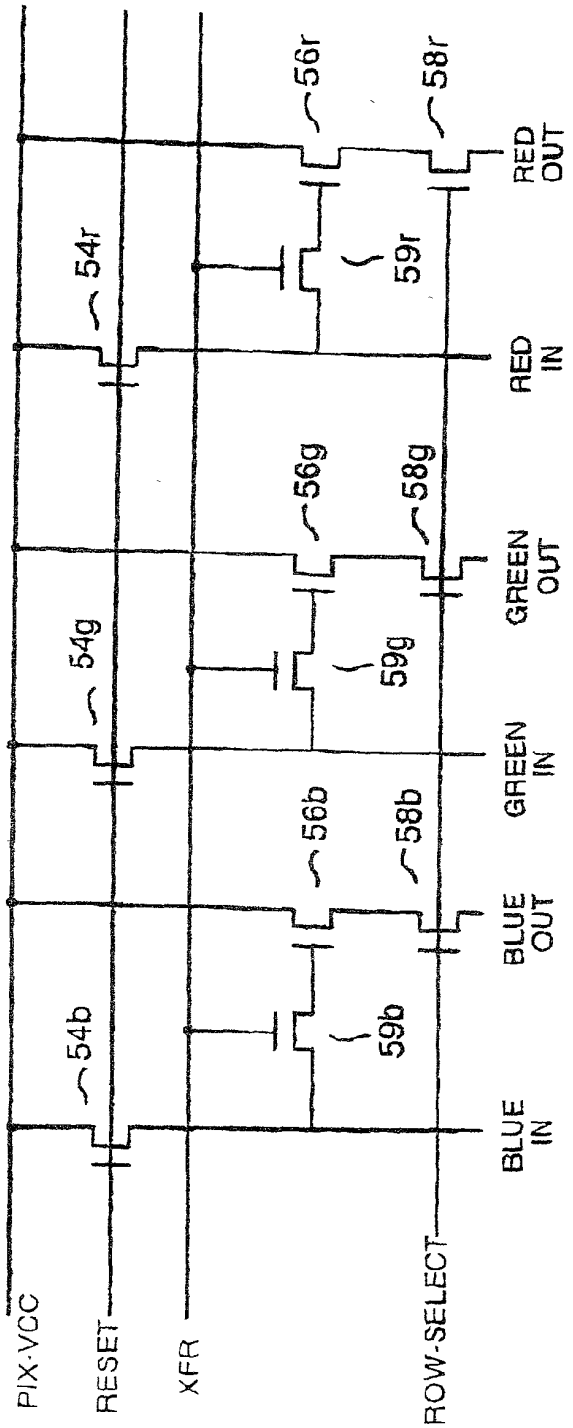

FIG. 2C

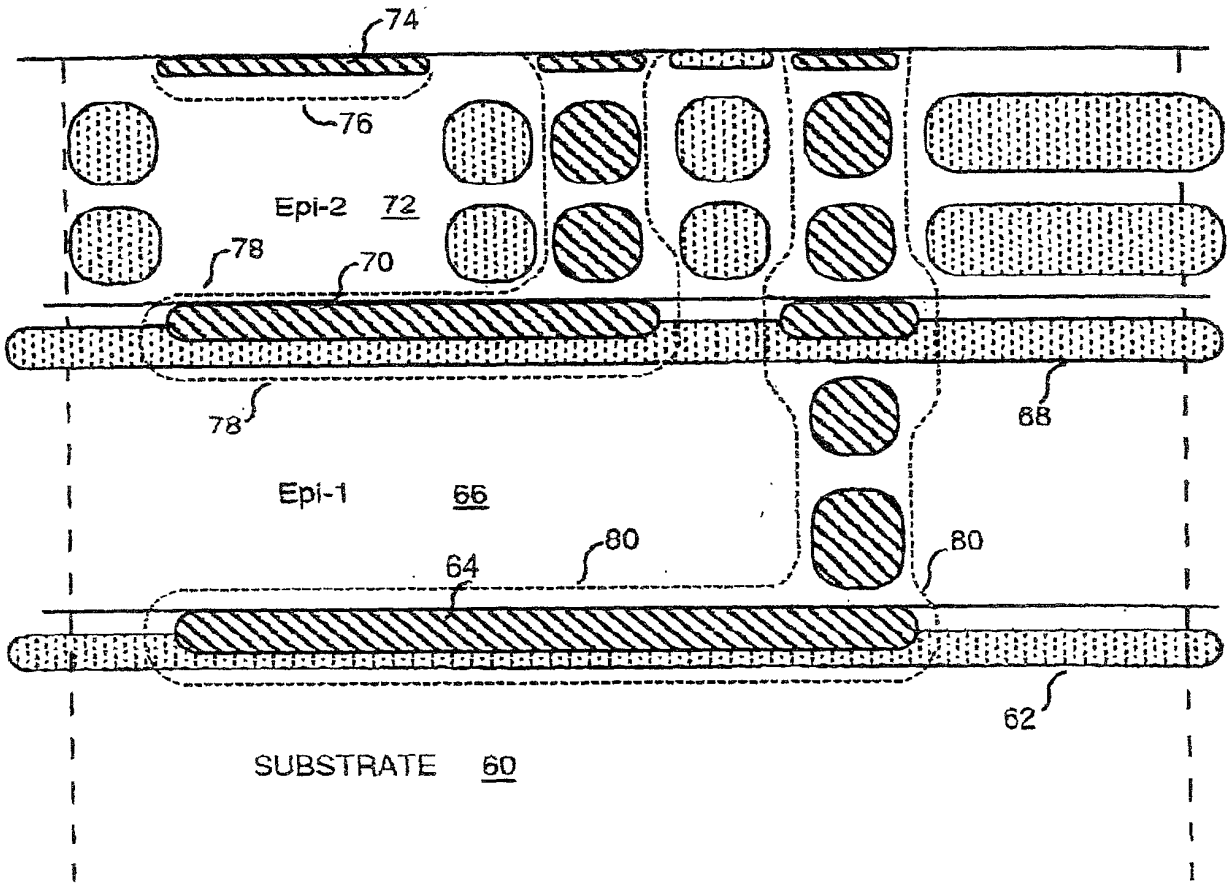

FIG. 3

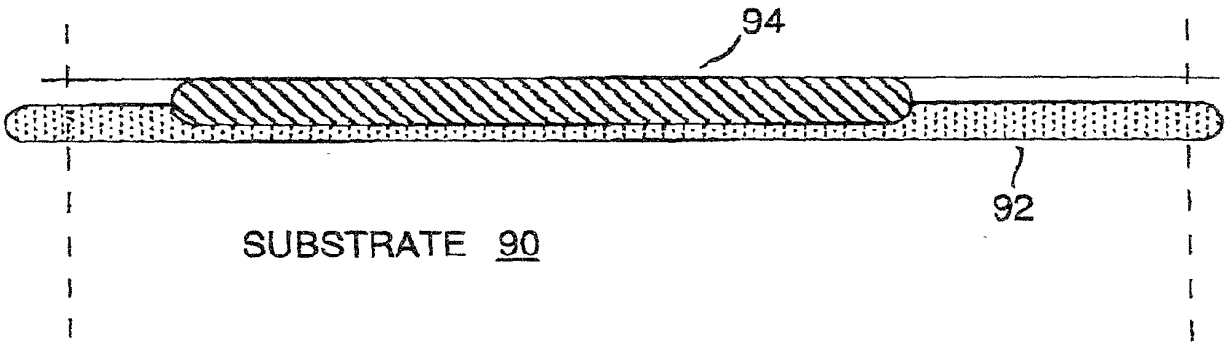

FIG. 4A

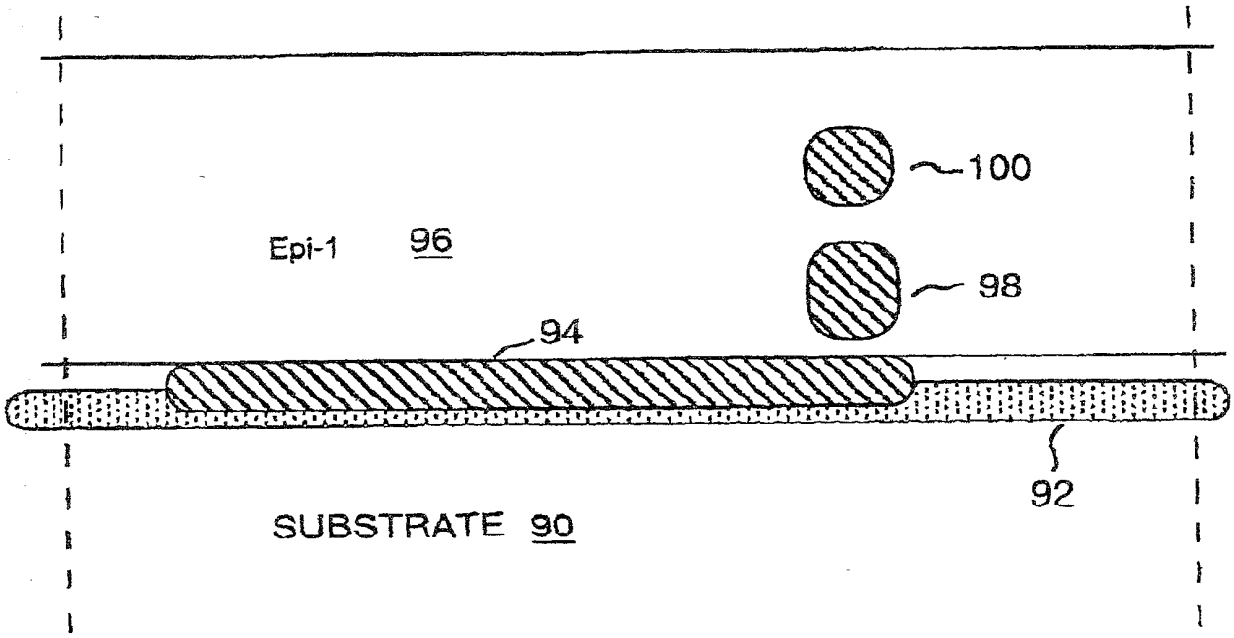

FIG. 4B

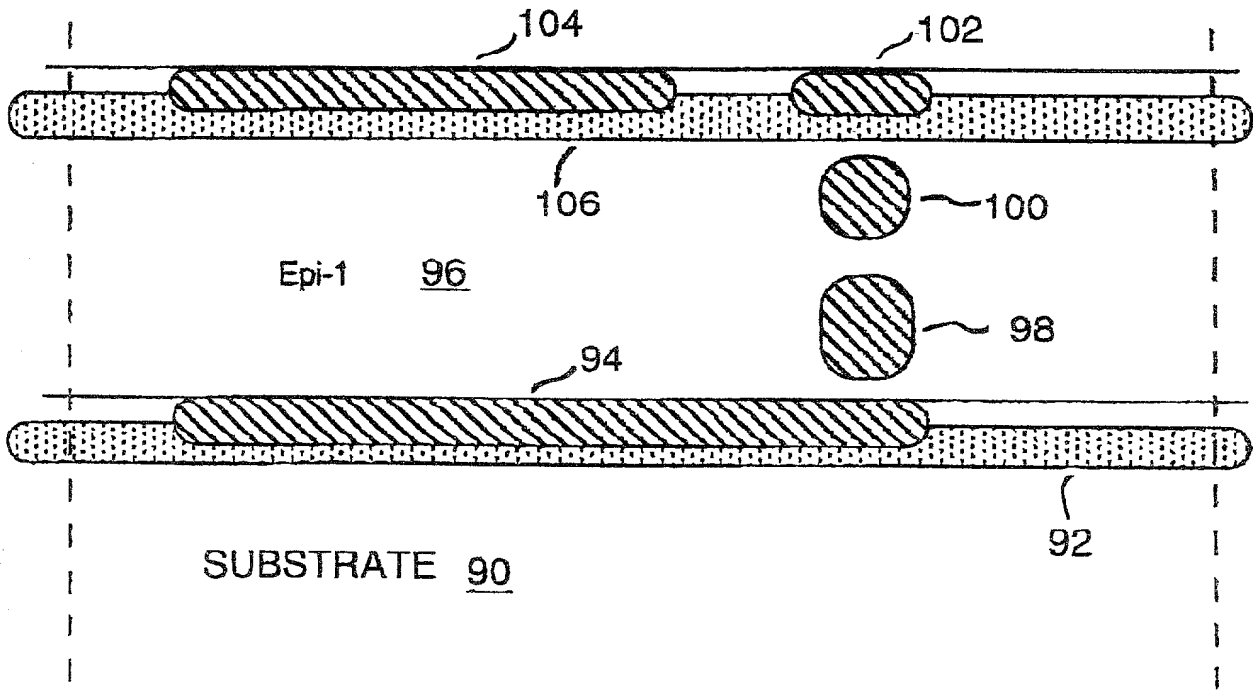

FIG. 4C

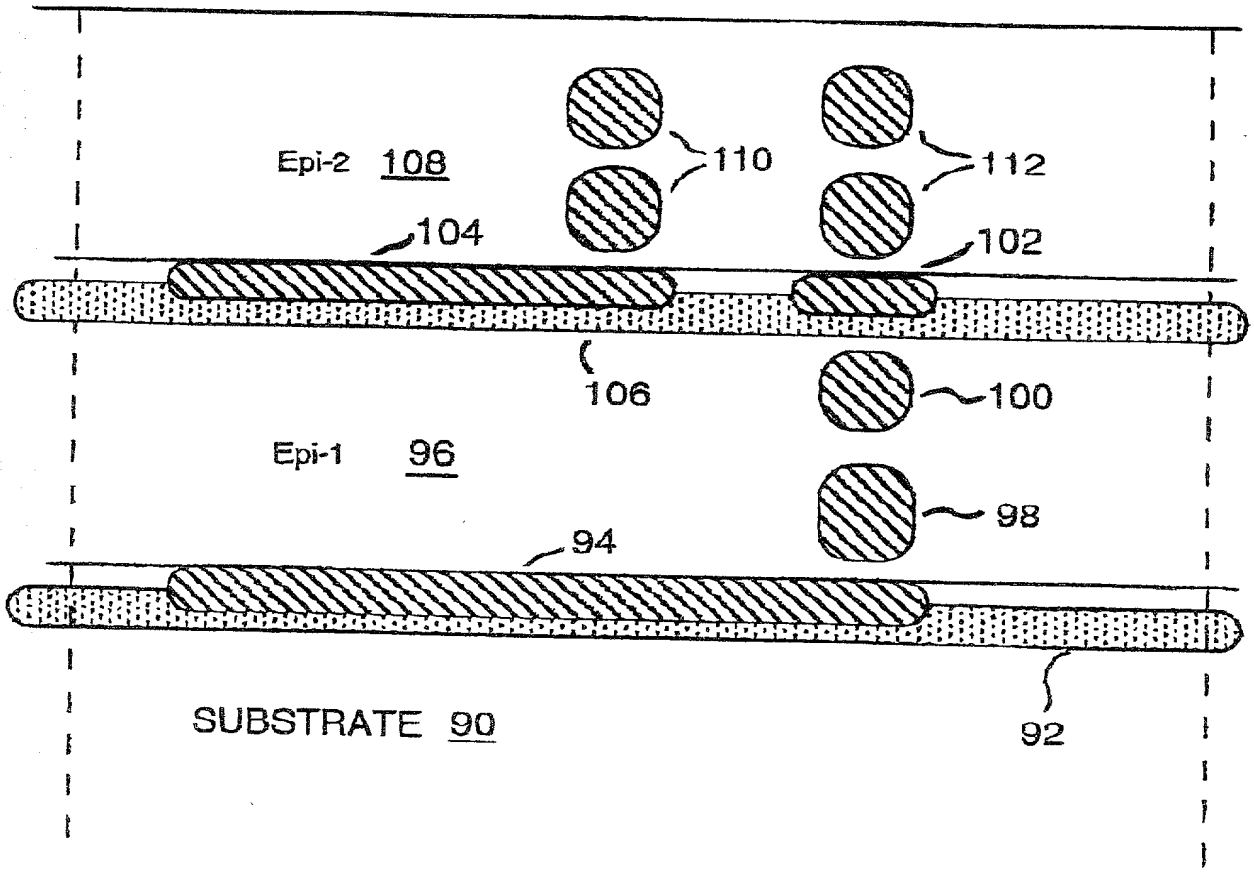

FIG. 4D

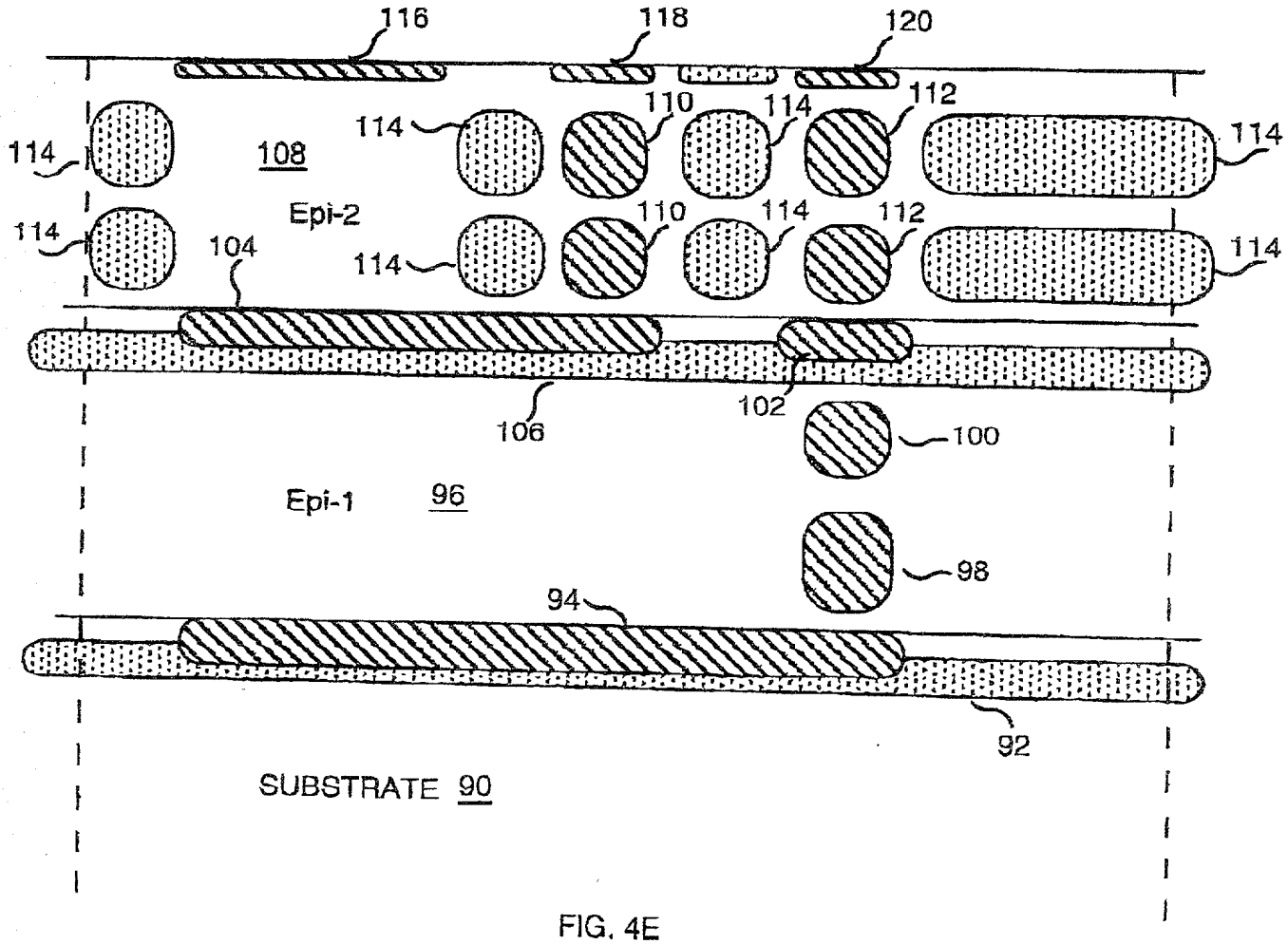
116
118
120
114
108
110
112
Epi-2
104
106
102
100
Epi-1
96
98
94
92
SUBSTRATE 90

FIG. 4E

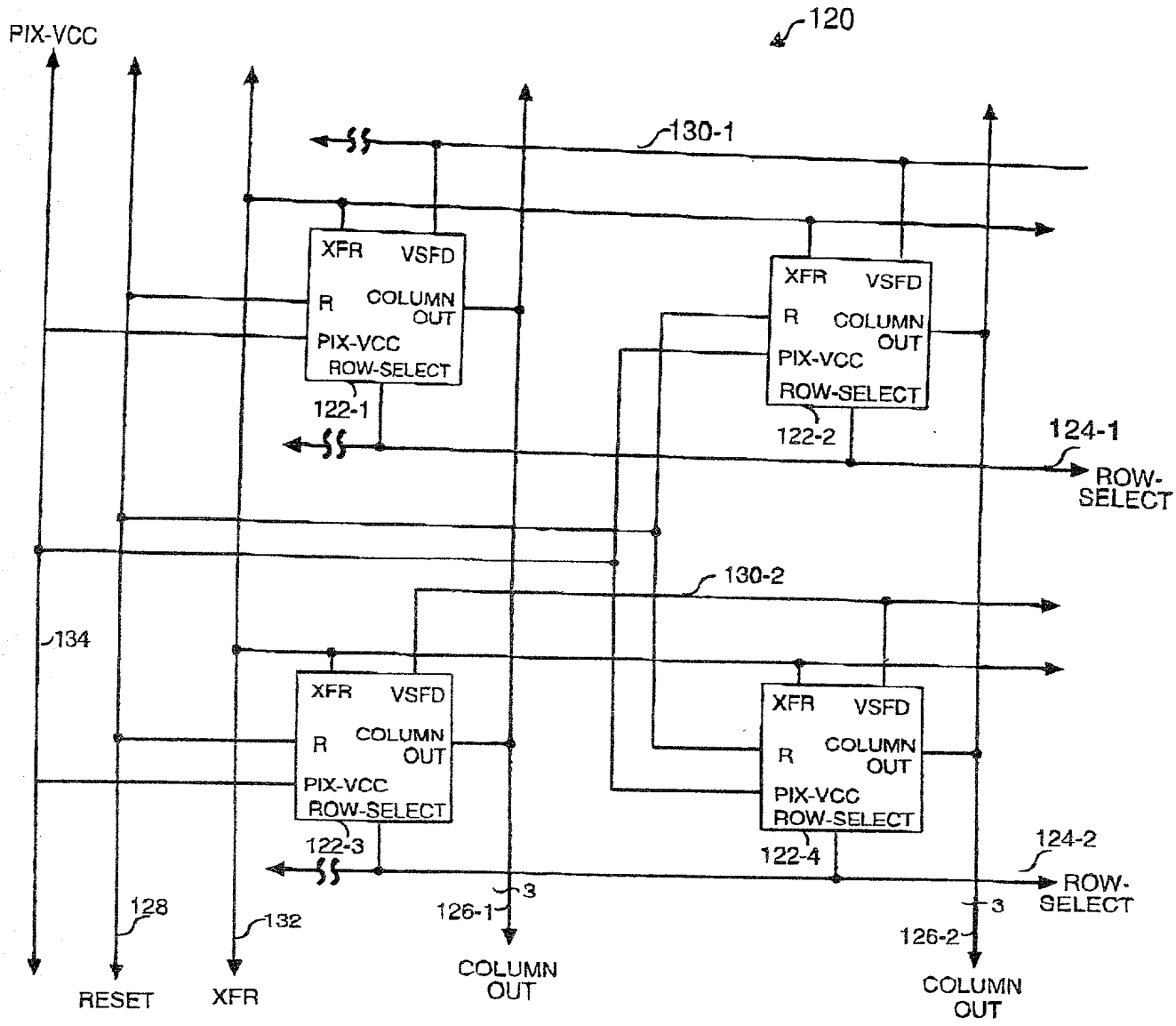
120
PIX-VCC
130-1
XFR
VSFD
R
COLUMN OUT
PIX-VCC
ROW-SELECT
122-1
122-2
124-1
ROW-SELECT
130-2
134
122-3
122-4
124-2
ROW-SELECT
128
132
126-1
126-2
3
RESET
XFR
COLUMN OUT
COLUMN OUT

FIG. 5

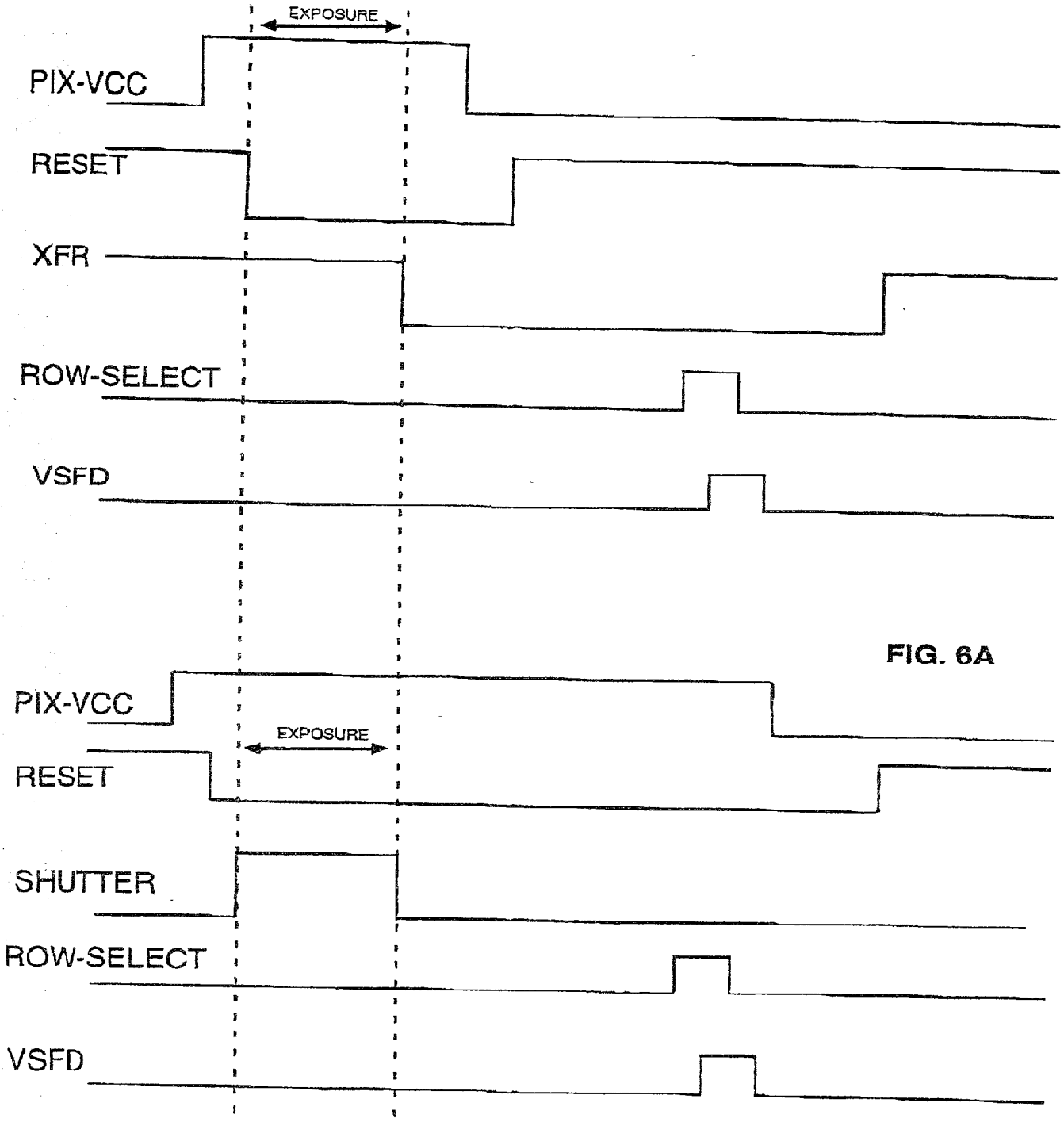
EXPOSURE
PIX-VCC
RESET
XFR
ROW-SELECT
VSFD

FIG. 6A

PIX-VCC
EXPOSURE
RESET
SHUTTER
ROW-SELECT
VSFD

FIG. 6B

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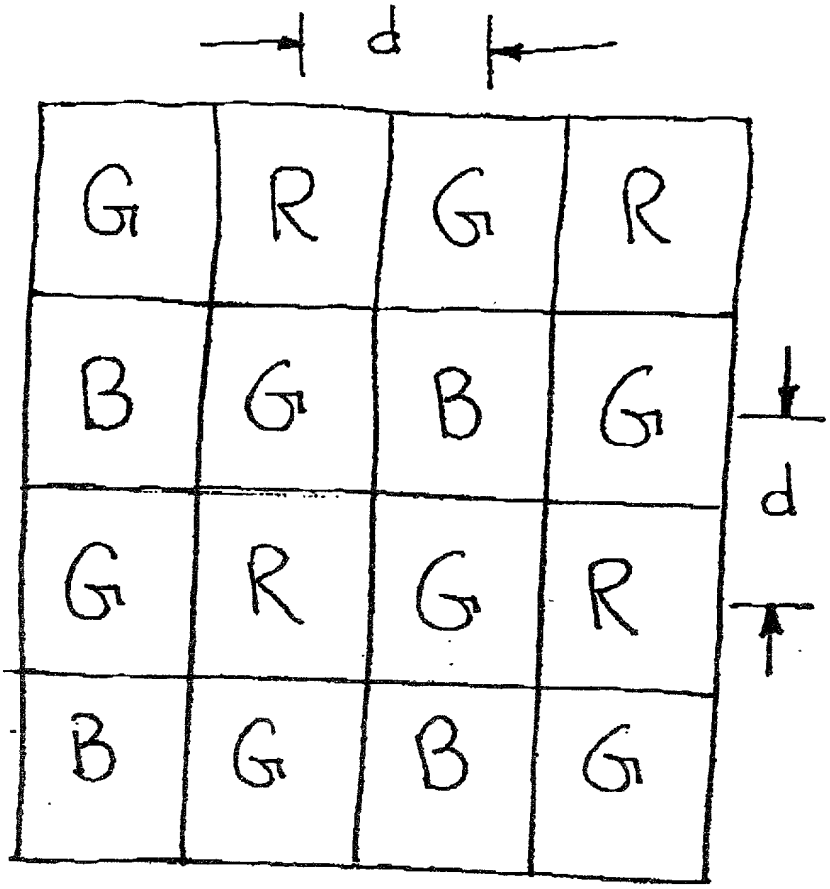

FIG. 1
(PRIOR ART)

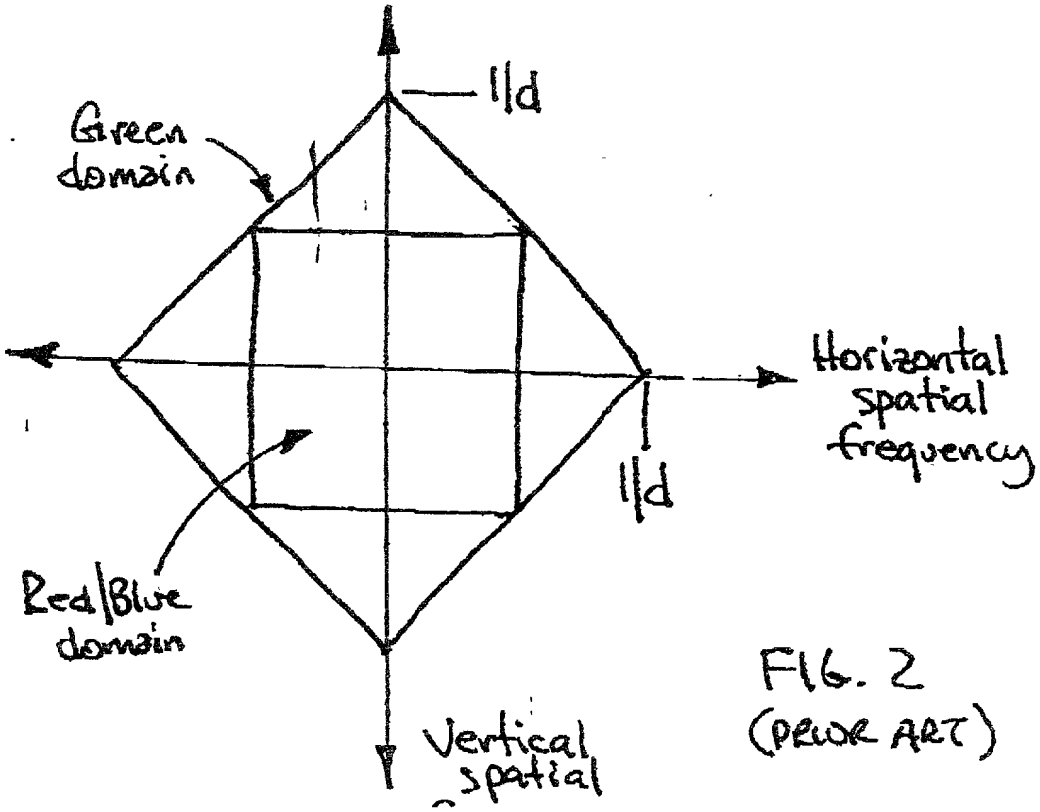

FIG. 2
(PRIOR ART)

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EJ650159895US

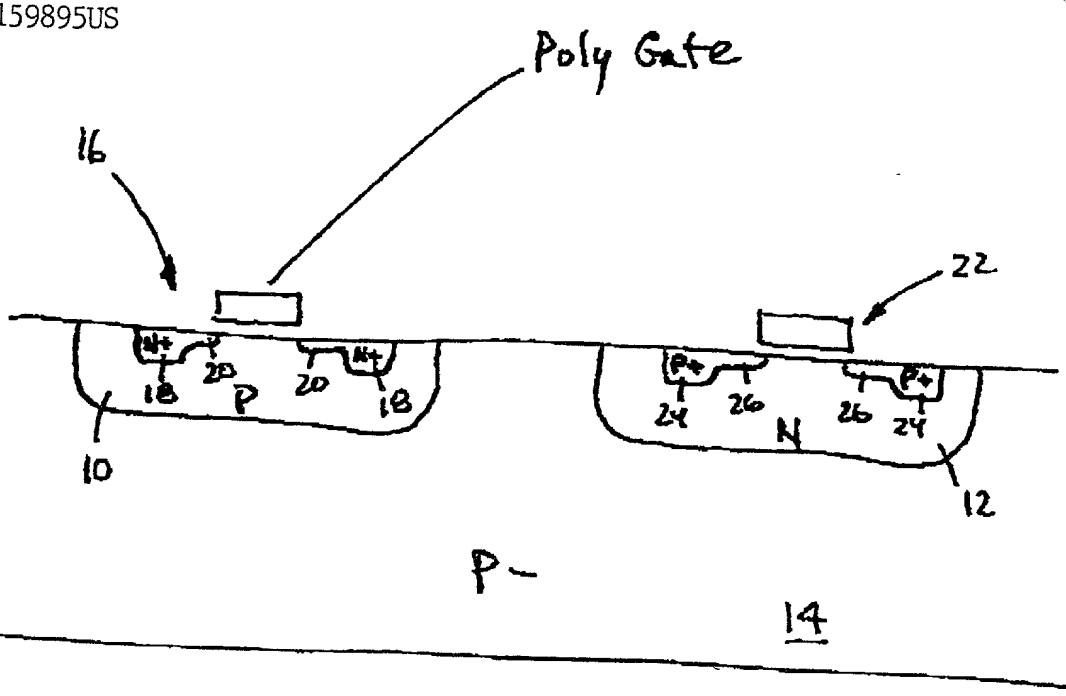

FIG. 3
(PRIOR ART)

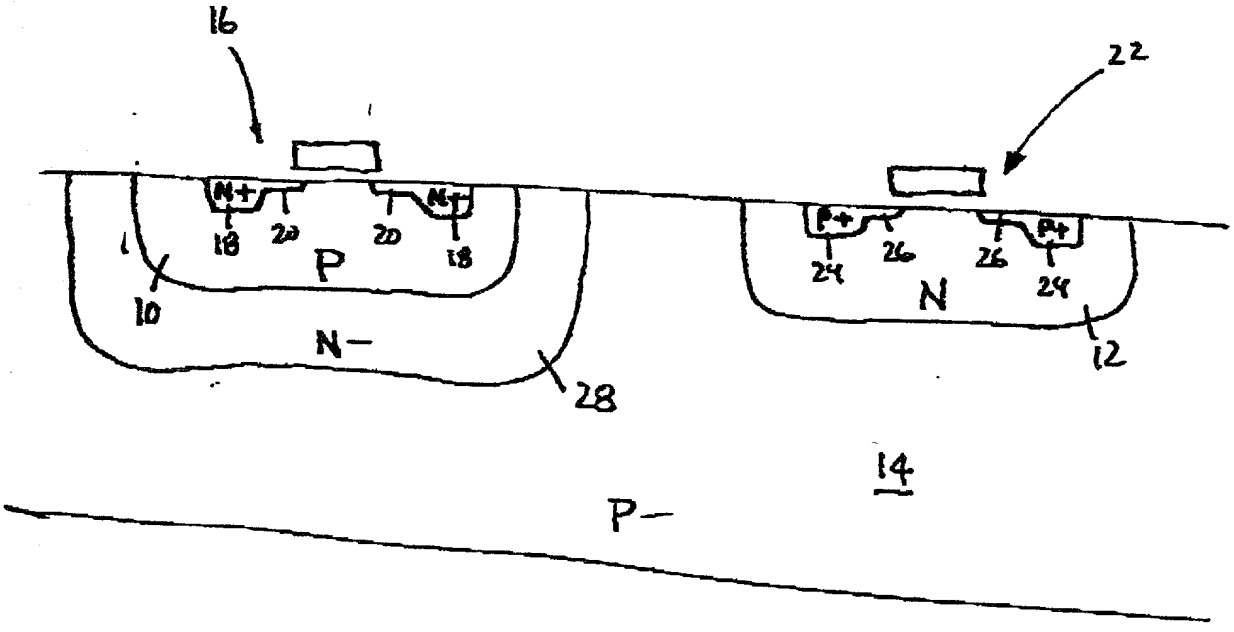

FIG. 4
(PRIOR ART)

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EJ650159895US

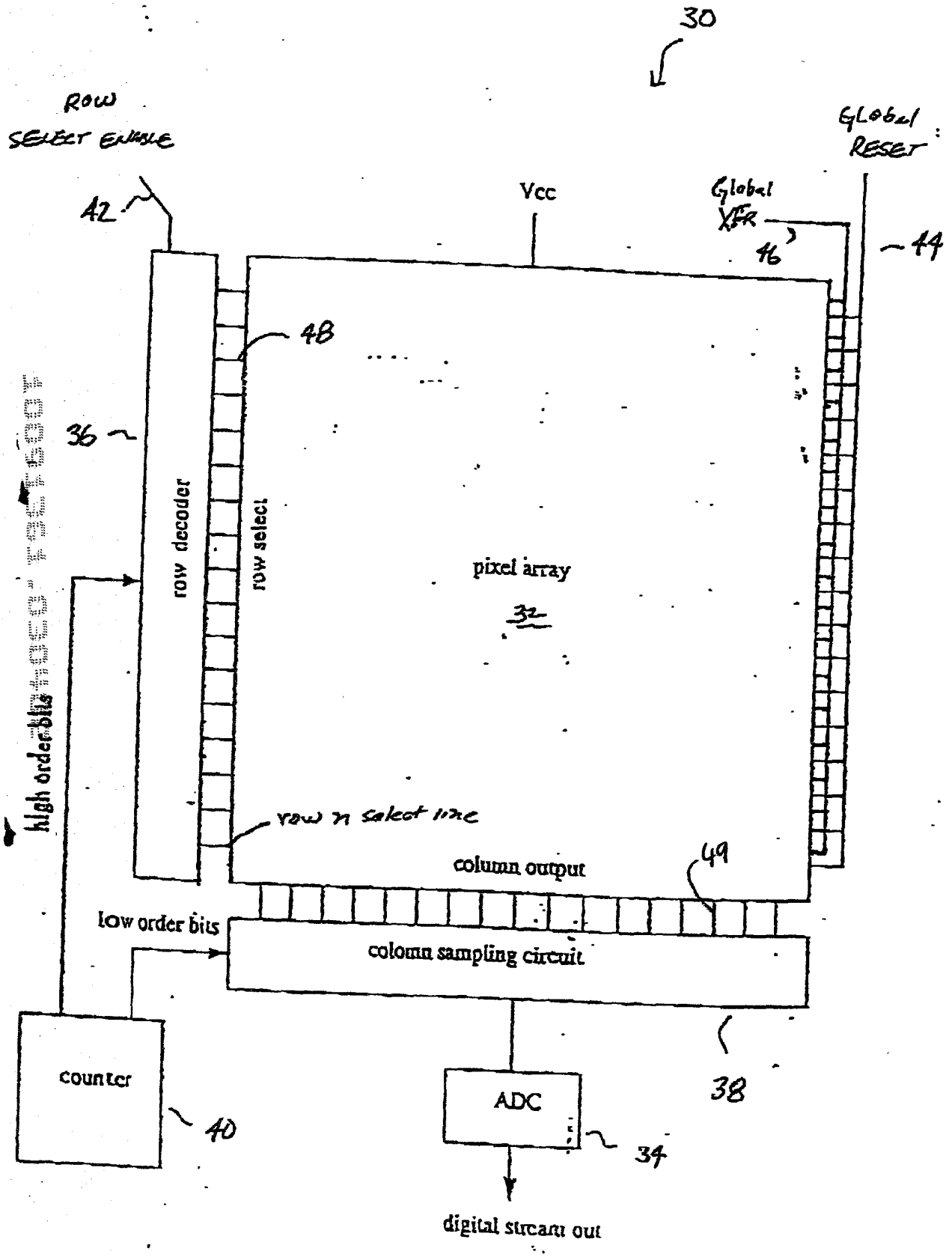

FIG 5

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EJ650159895US

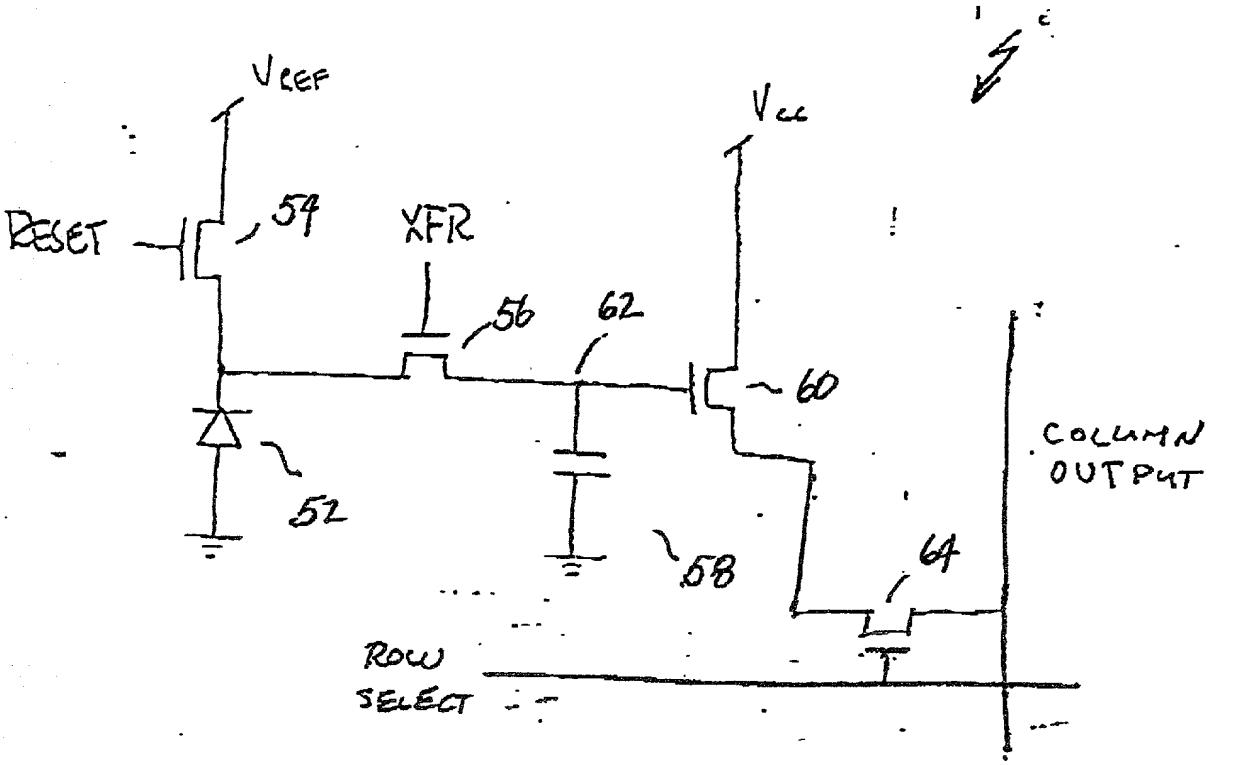

FIG. 6

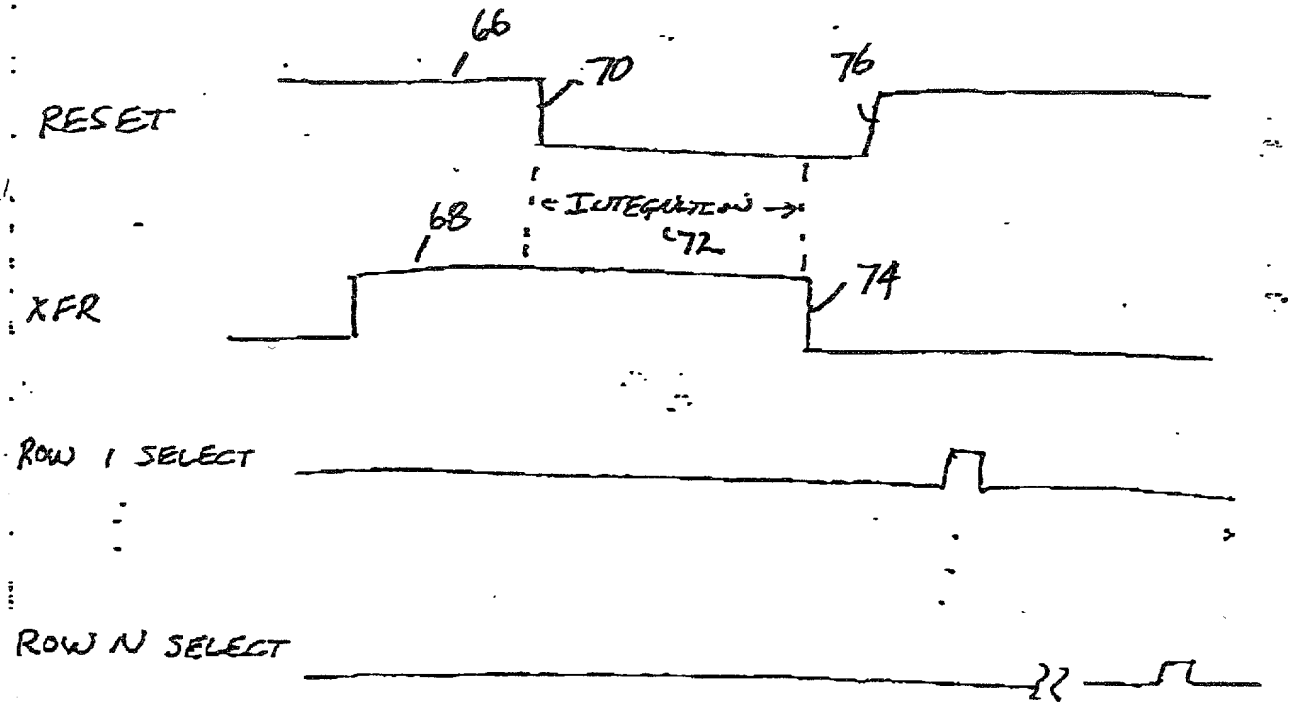

FIG 7

EJ650159895US

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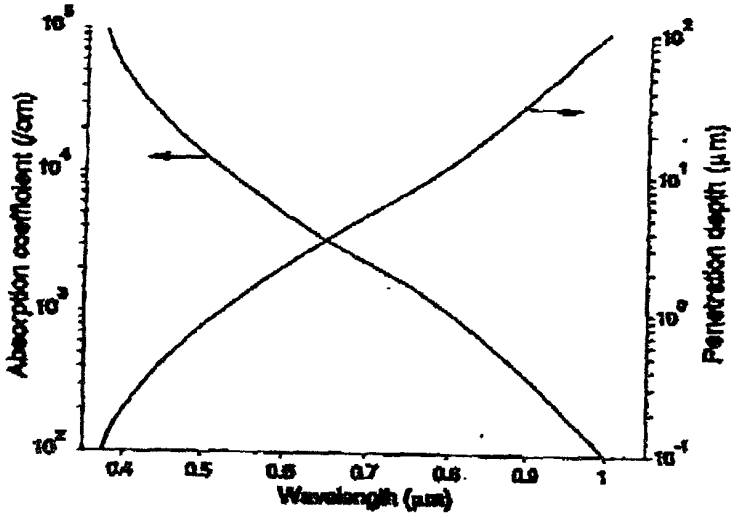


FIG. 8
(PRIOR ART)

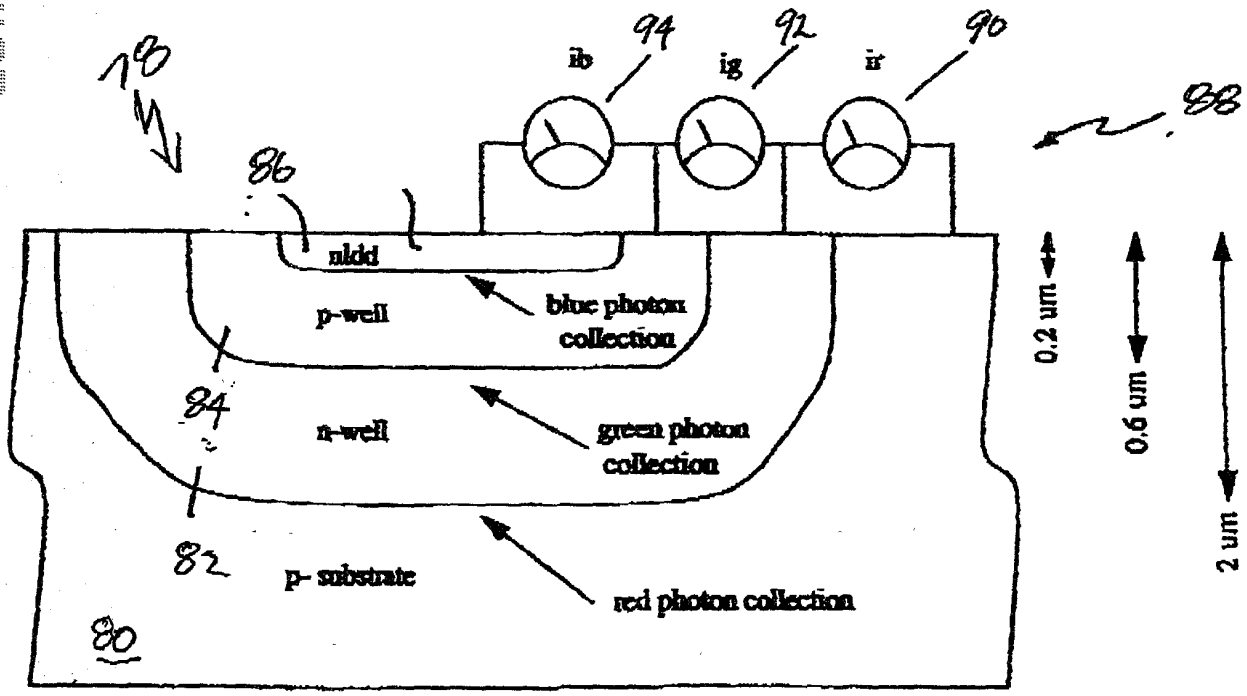


FIG. 9

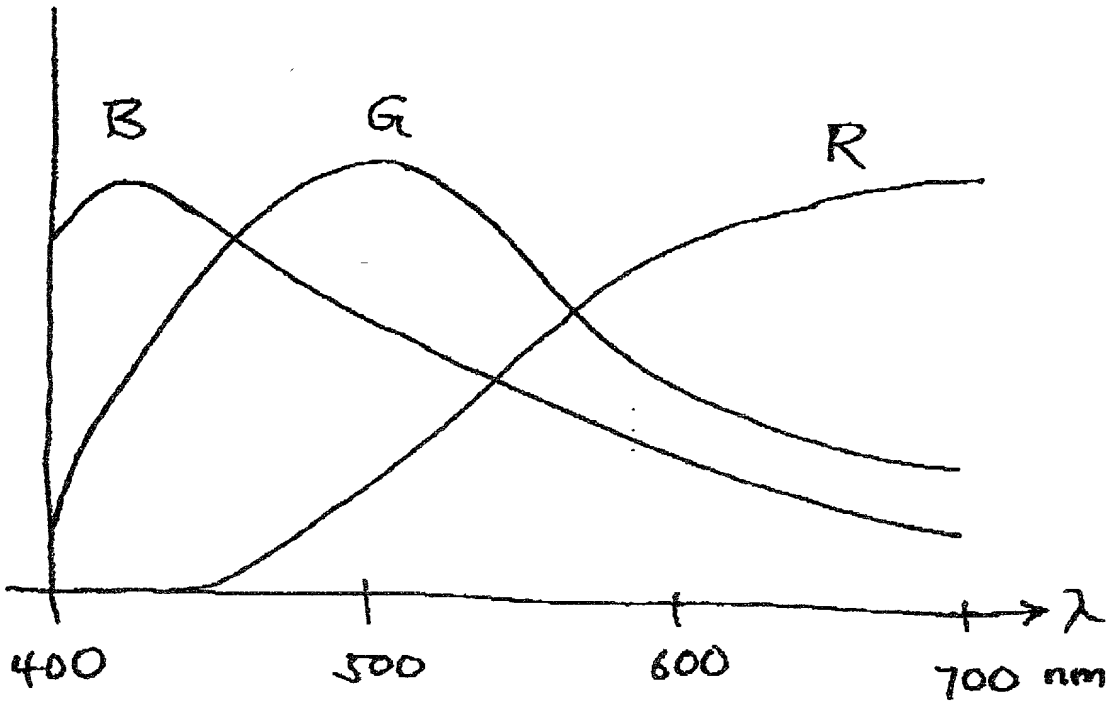


FIG. 10

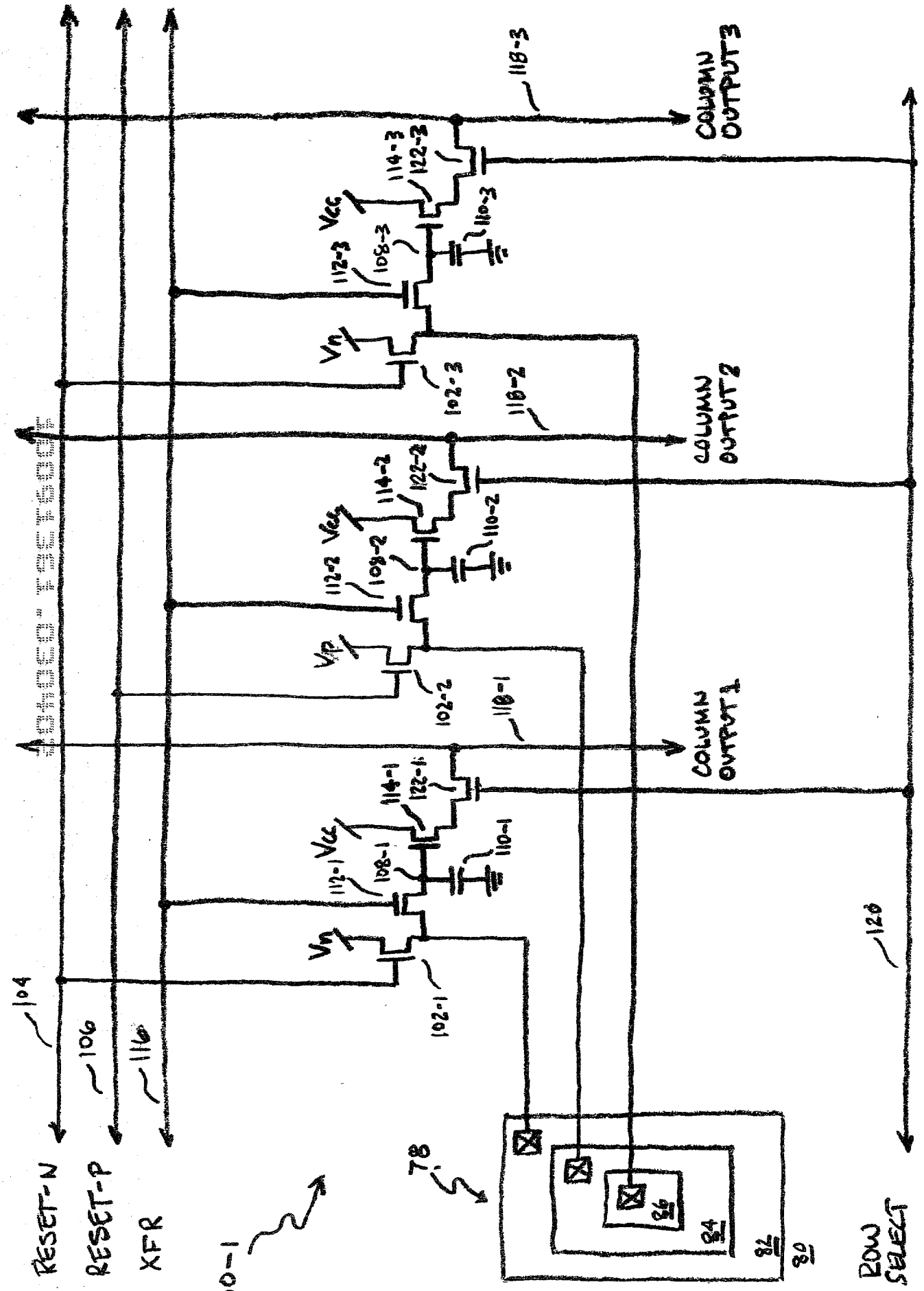

RESET-N
RESET-P
XFR
90-1
78
104
106
116
120
ROW SELECT
COLUMN OUTPUT 1
COLUMN OUTPUT 2
COLUMN OUTPUT 3
Vcc
Vss
102-1
102-2
102-3
108-1
108-2
108-3
110-1
110-2
110-3
112-1
112-2
112-3
114-1
114-2
114-3
118-1
118-2
118-3
122-1
122-2
122-3
80
82
84
86

FIG. 11

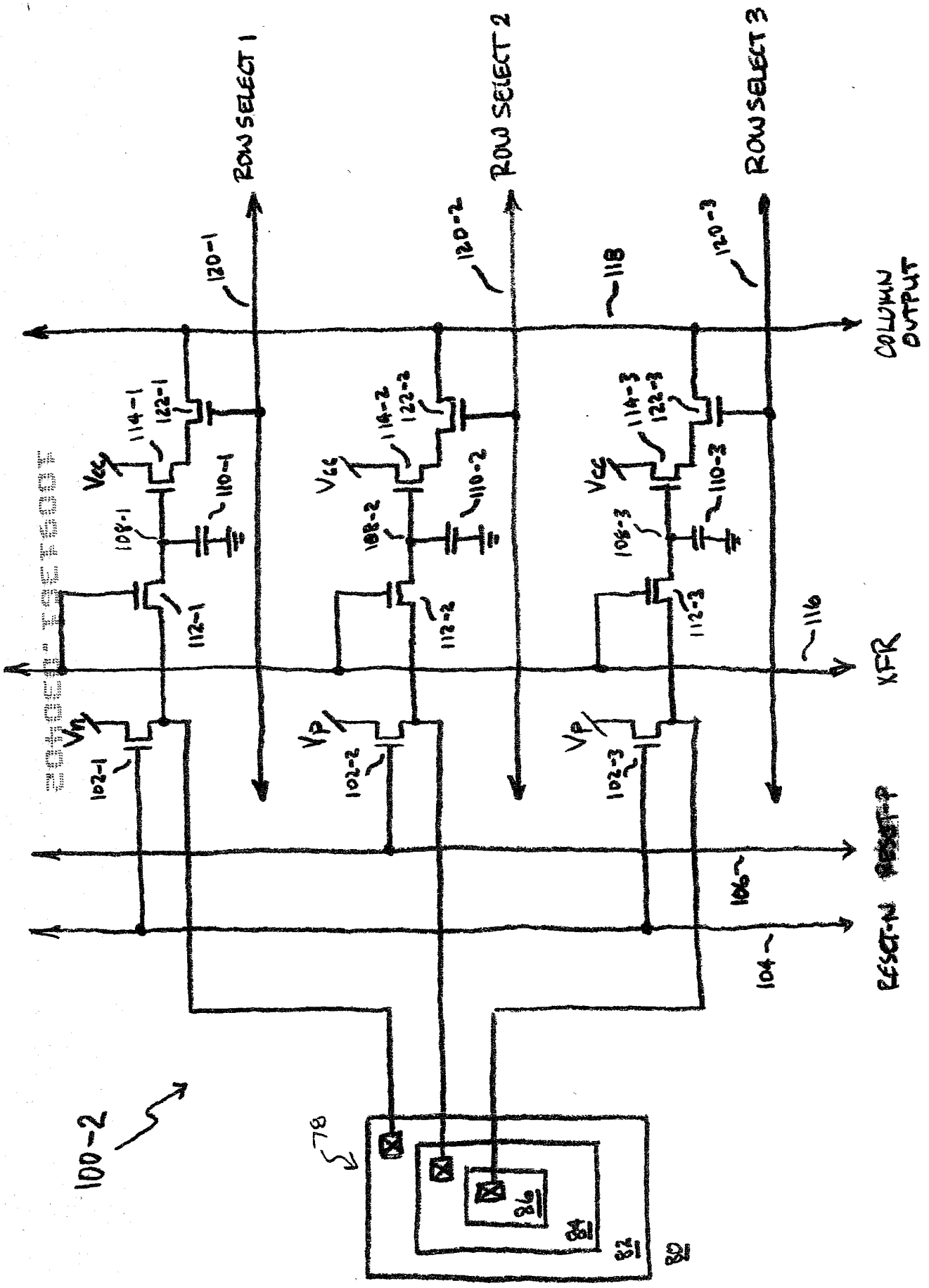

ROW SELECT 1
ROW SELECT 2
ROW SELECT 3
120-1
120-2
120-3
118
COLUMN OUTPUT
114-1
122-1
114-2
122-2
114-3
122-3
110-1
110-2
110-3
108-1
108-2
108-3
112-1
112-2
112-3
116
XFR
102-1
102-2
102-3
106
104
100-2
78
26
24
22
20

FIG. 12

EJ650159895US

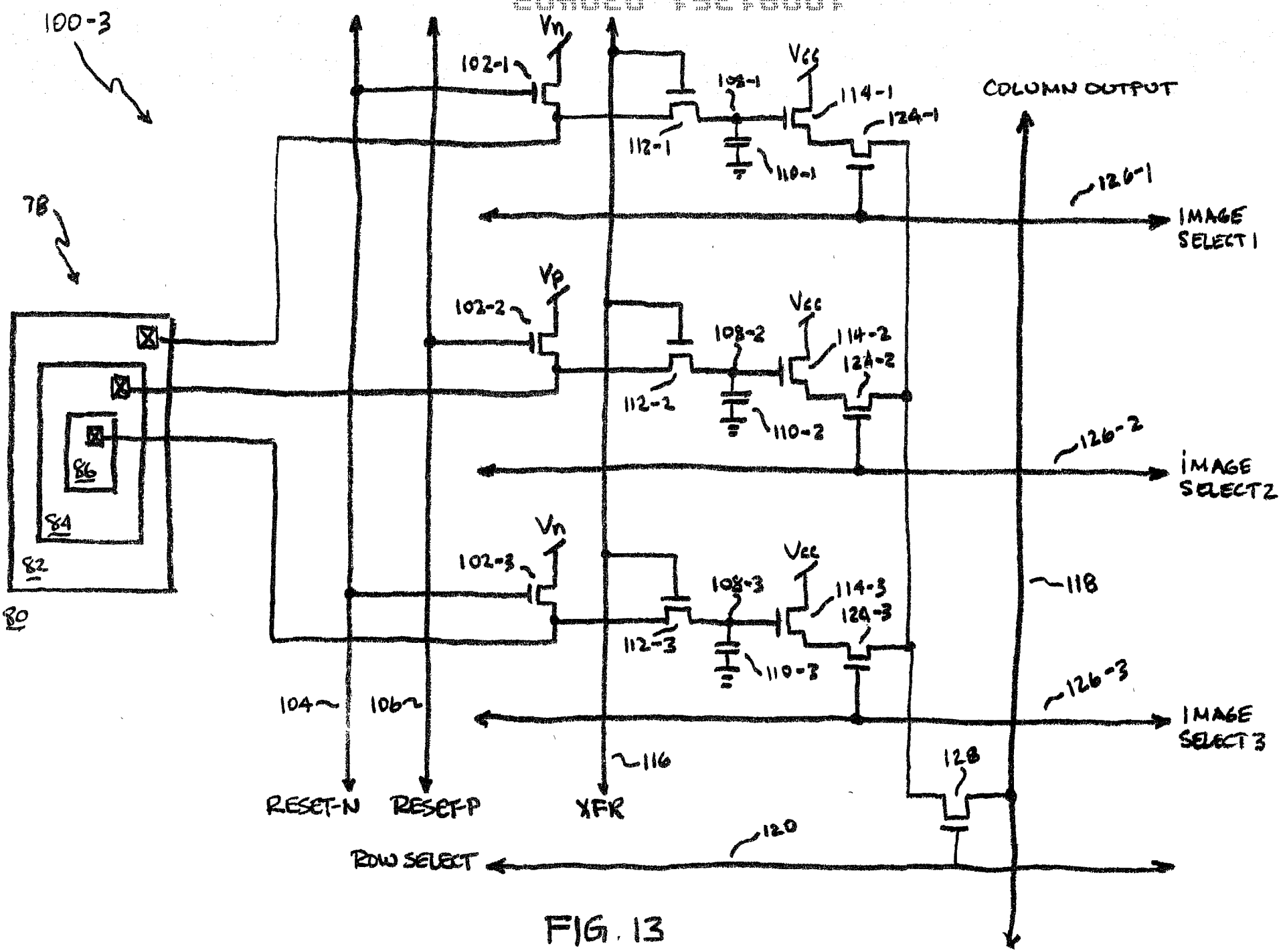


FIG. 13

FOV-029

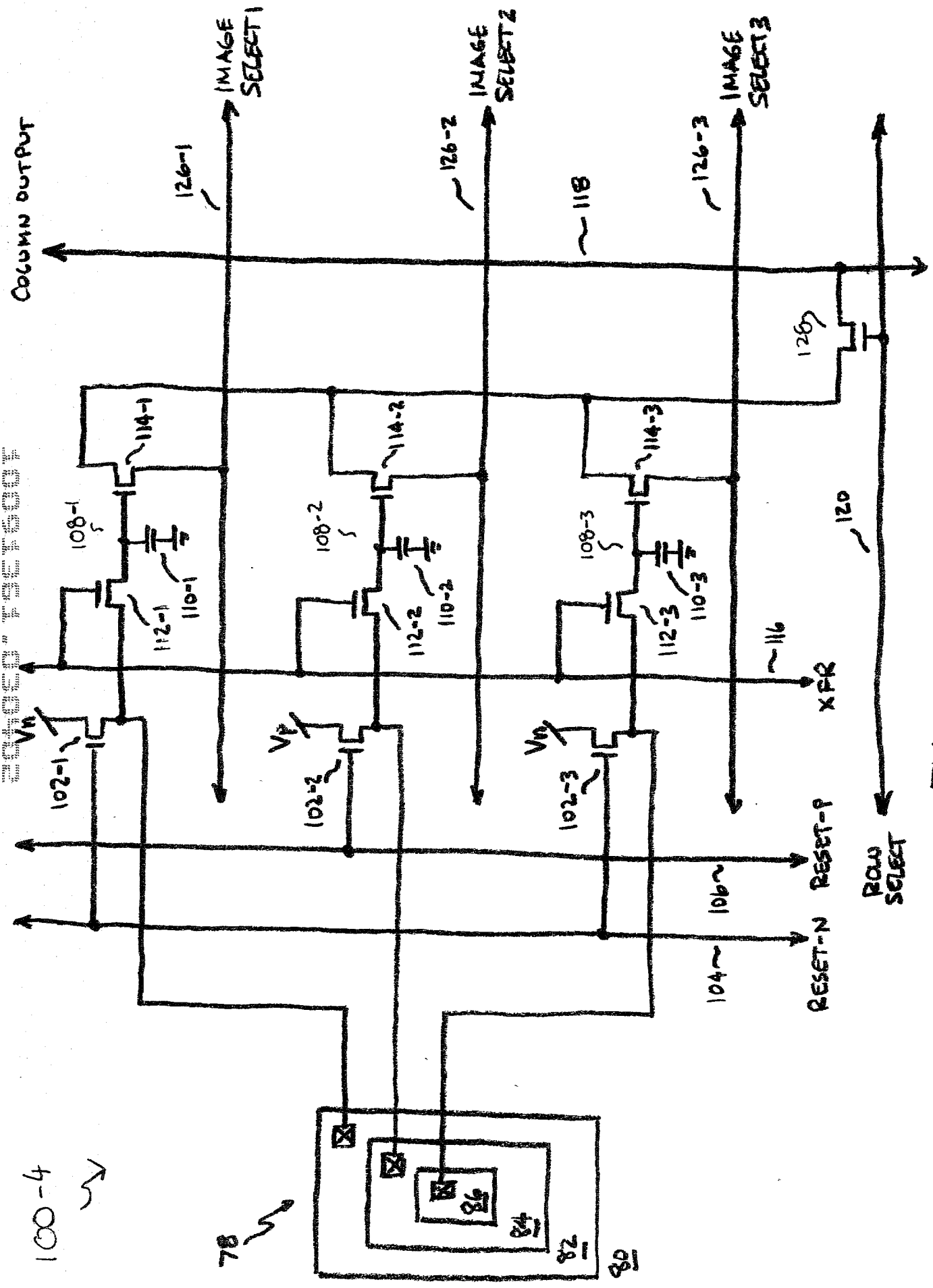


FIG. 14

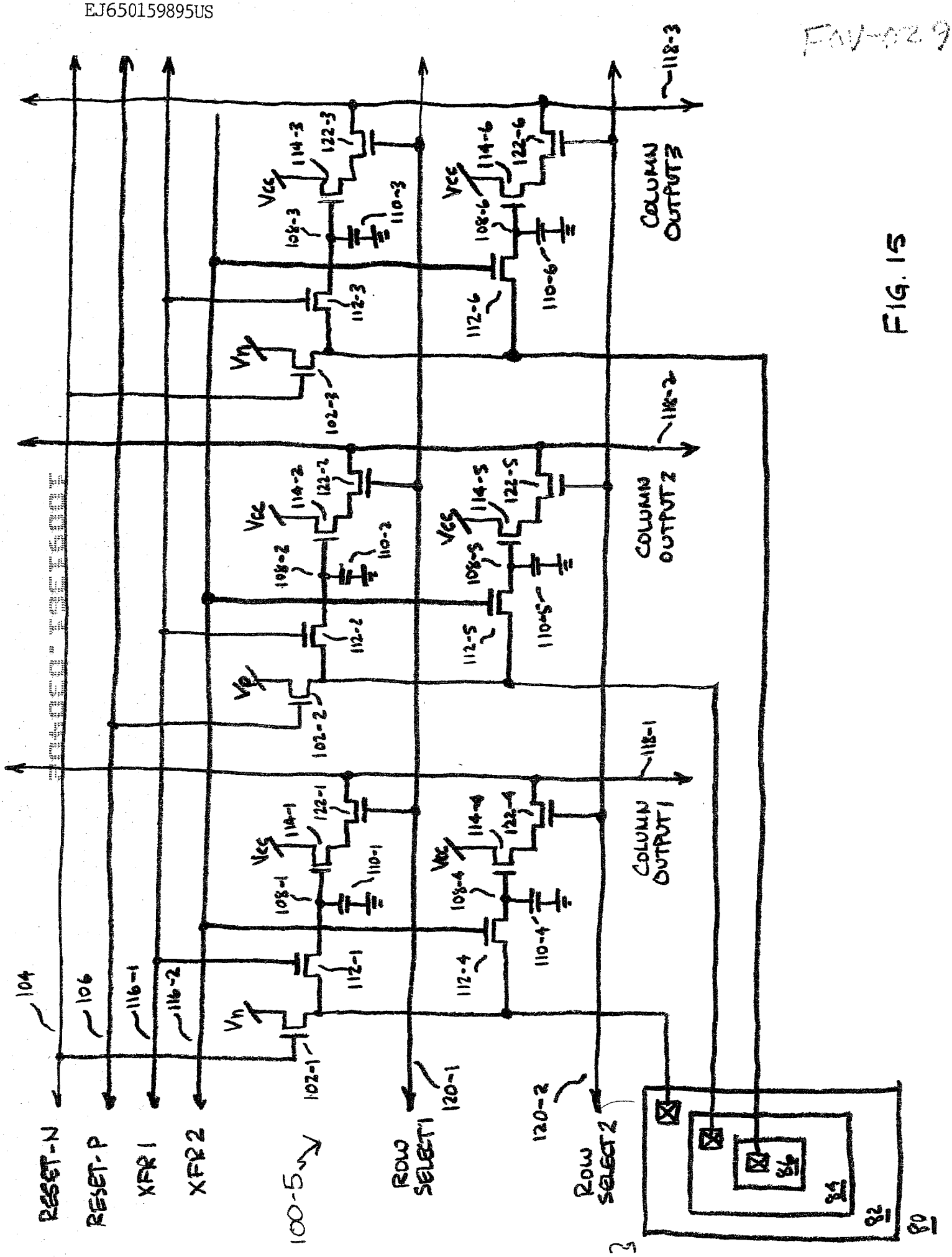

RESET-N
RESET-P
XFR1
XFR2
100-5
ROW SELECT1
ROW SELECT2
COLUMN OUTPUT 1
COLUMN OUTPUT 2
COLUMN OUTPUT 3
104
106
116-1
116-2
118-1
118-2
118-3
120-1
120-2
102-1
102-2
102-3
108-1
108-2
108-3
108-4
108-5
108-6
110-1
110-2
110-3
110-4
110-5
110-6
112-1
112-2
112-3
112-4
112-5
112-6
114-1
114-2
114-3
114-4
114-5
114-6
122-1
122-2
122-3
122-4
122-5
122-6
Vcc
Vn
82
84
86
80

FIG. 15

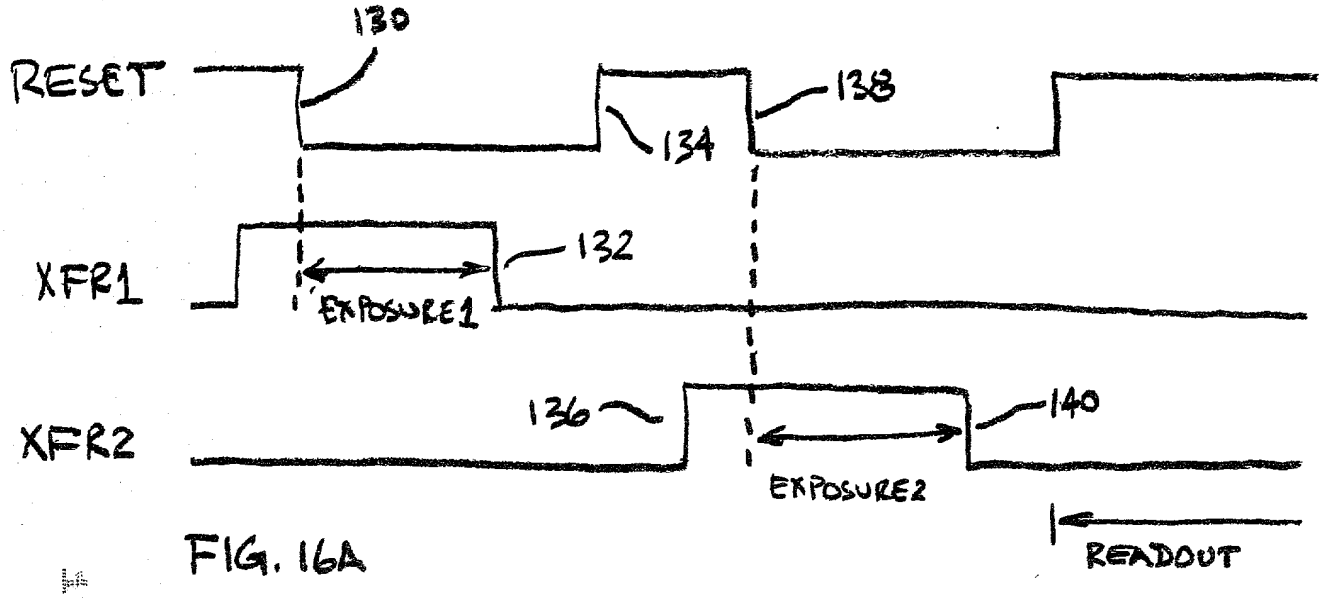


FIG. 16A

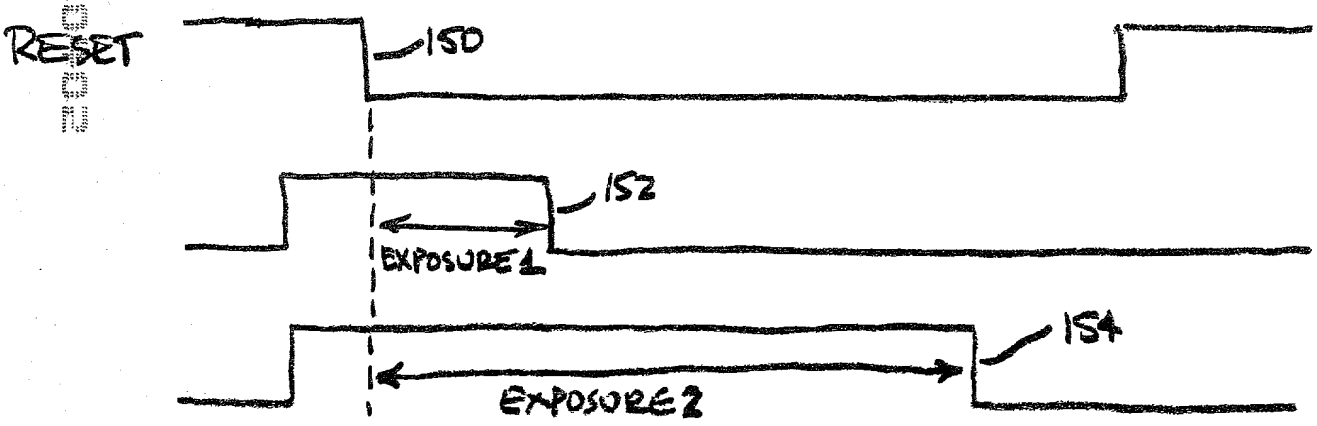
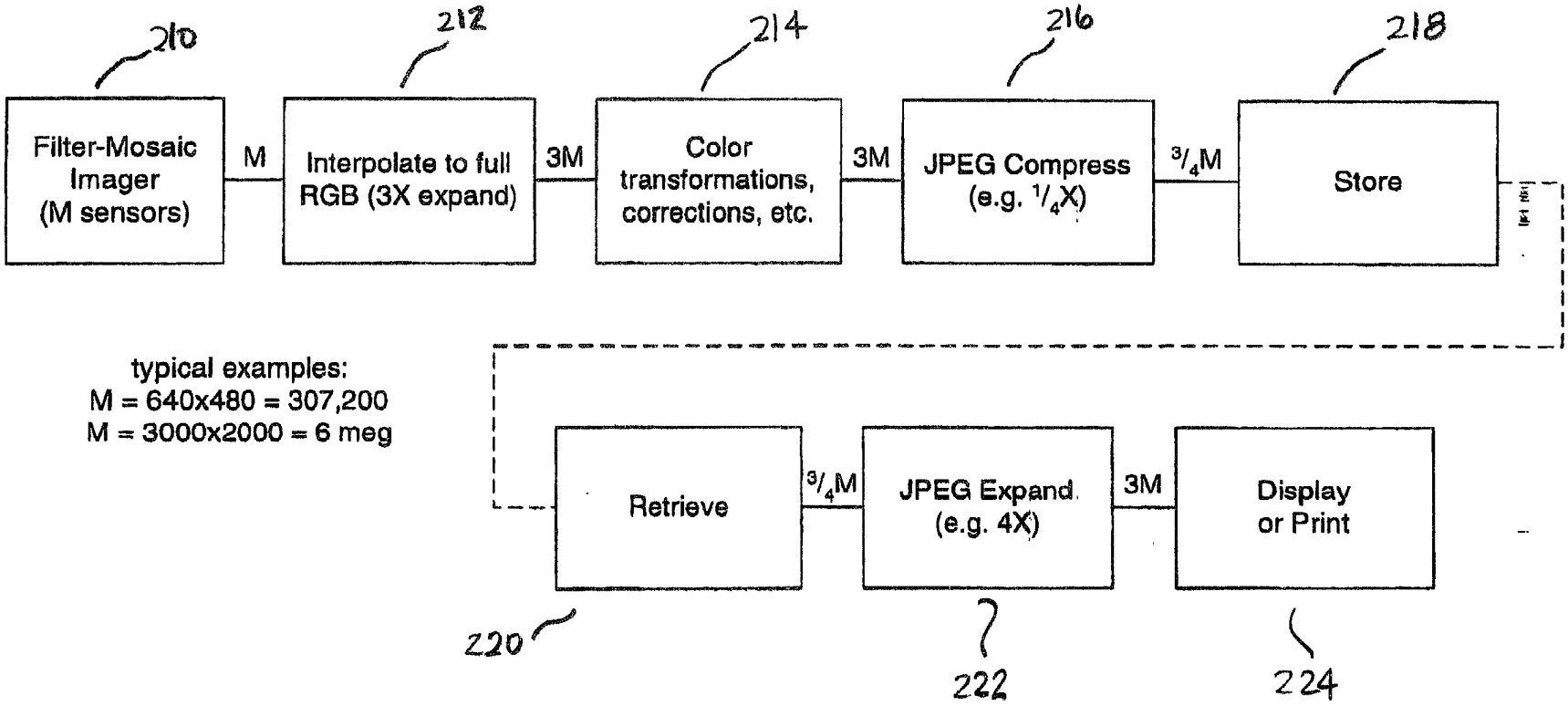


FIG. 16B



PRIOR ART

FIG. 17

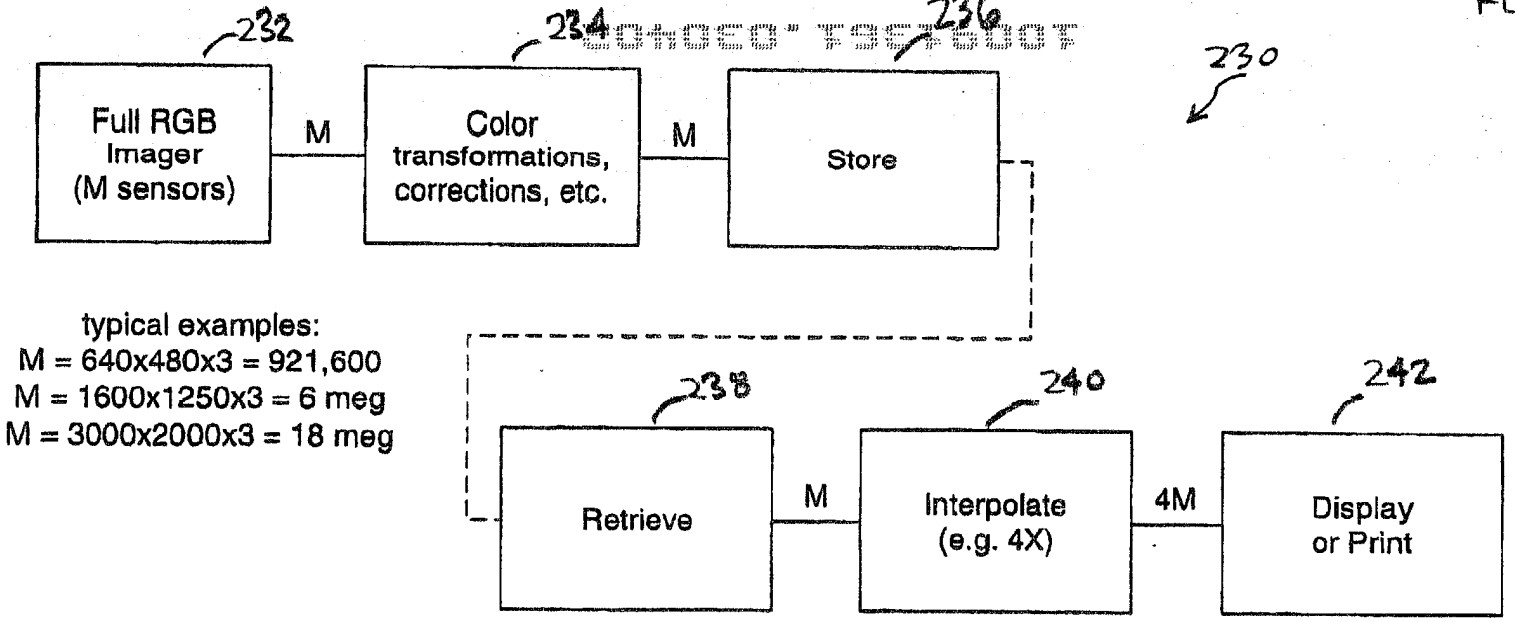


FIG. 18A

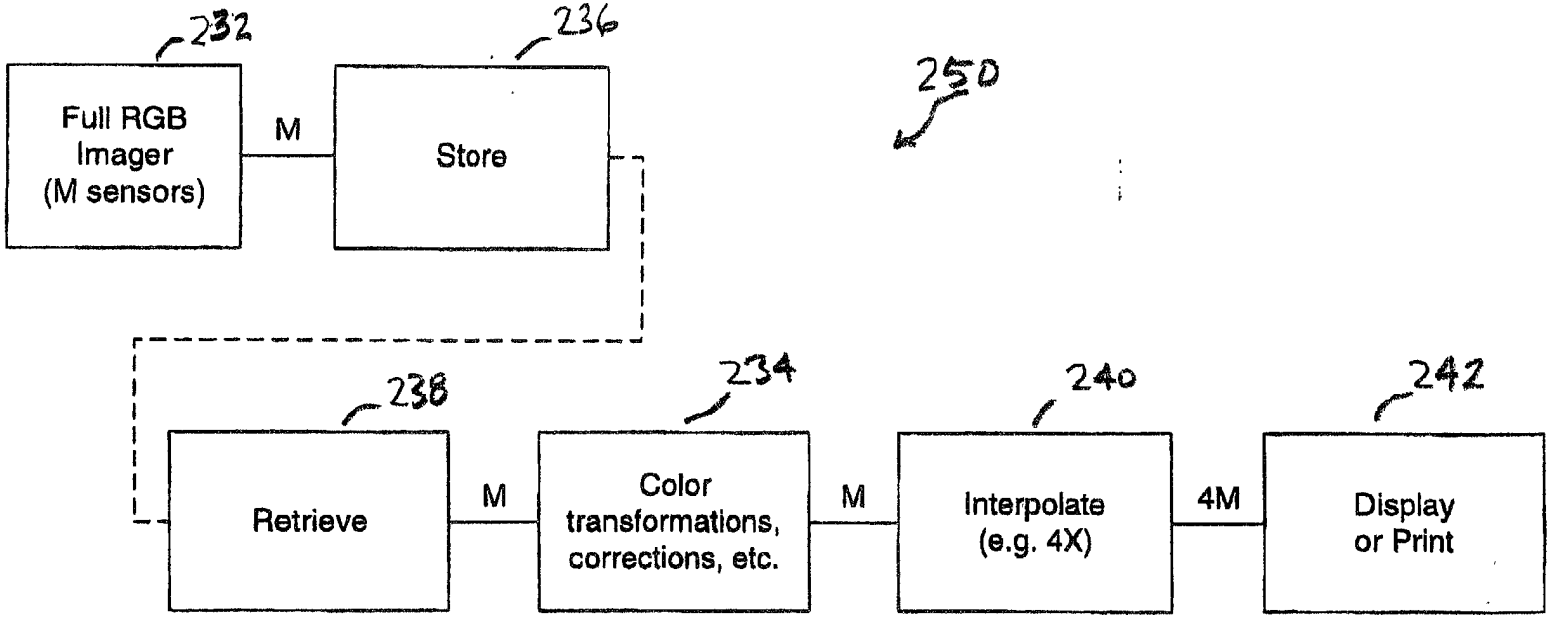


FIG. 18B

EJ650159895US
NO. 711 P. 3

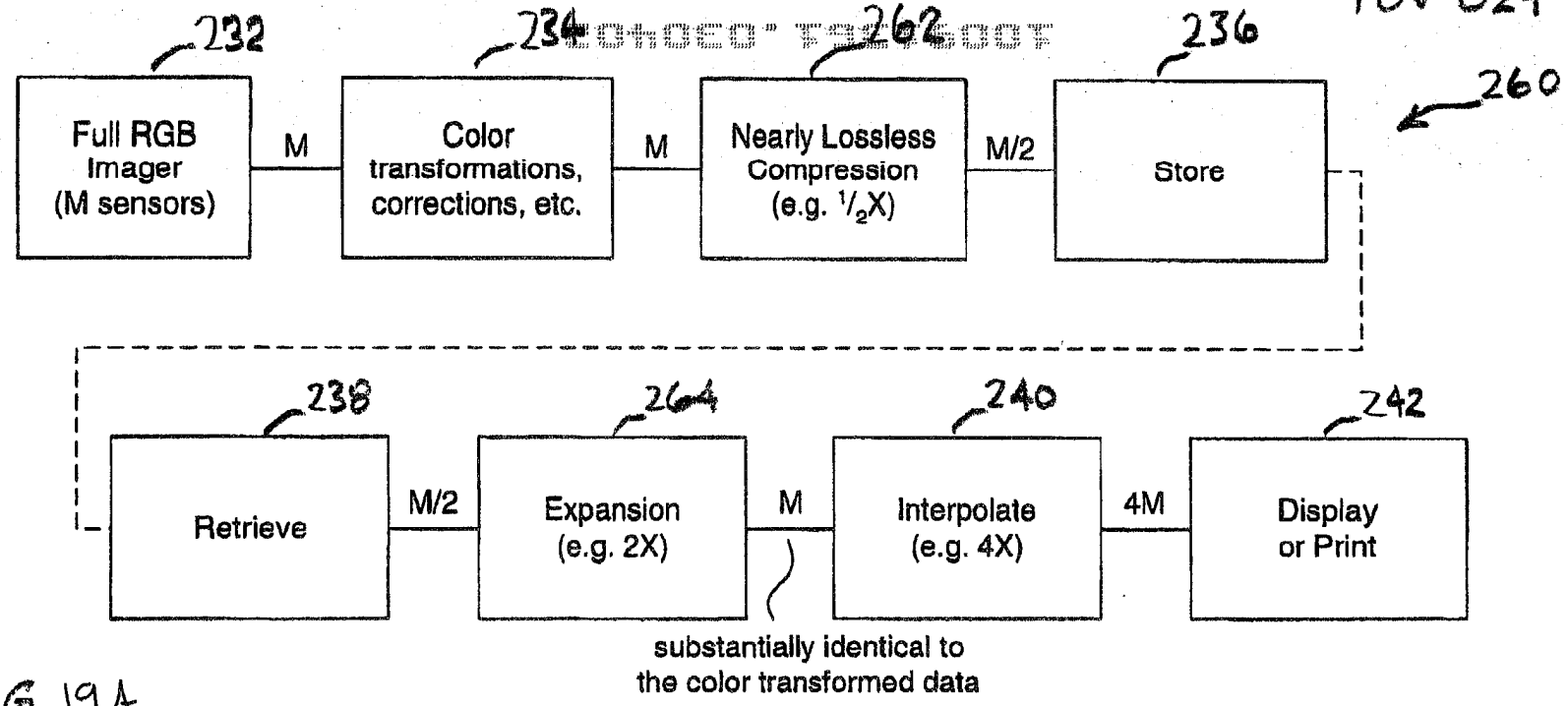


FIG. 19A

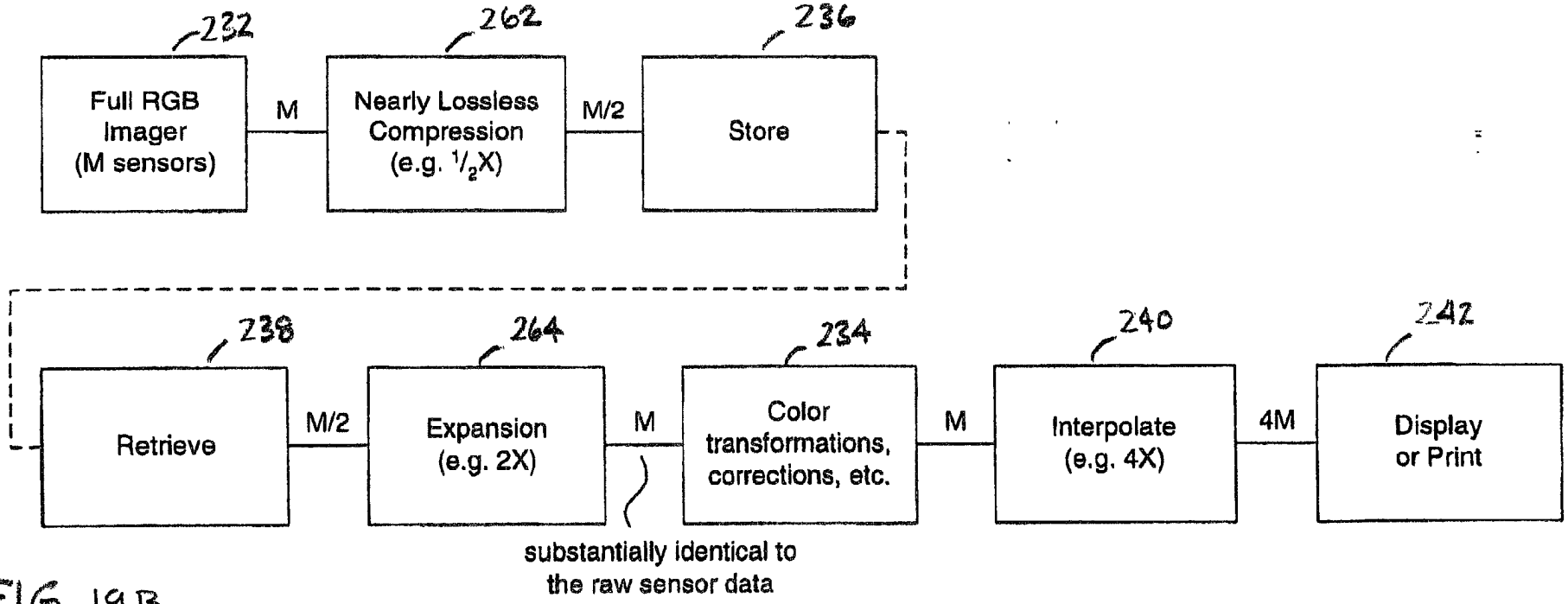


FIG. 19B

EJ650159895US